



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/688,964

10/21/2003

Sco-Hyun Cho

1349.1308

3908

21171

7590

05/25/2006

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

VO, ANH T N

ART UNIT

PAPER NUMBER

2861

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/688,964

Applicant(s)

CHO ET AL.

Examiner

Anh T.N. Vo

Art Unit

2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

FINAL REJECTION

The rejection over Shinada (US 6,899,417) is withdrawn in view of the amendments to the claims.

CLAIM REJECTIONS

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior arts are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-14 are rejected under 35 USC 103 (a) as being unpatentable over Kobayashi et al (6,238,042) in view of Higuma et al (US 6,174,053) and further in view of Oda et al (US 5,52,816).

Kobayashi disclose in Figure 1a an ink cartridge comprising:

- an air passage (414);
- a foam chamber (411) generating a negative pressure, and having foam (420) contained inside, an ink head (not shown) and a filter (425);
- an ink chamber (412) storing ink, formed at one side of the foam chamber (411) and separated from the foam chamber by a partition (410) having an opening (419) to provide a connection to the foam chamber (411); and
- a cartridge cover (16) having an ink injection port (415) formed thereon and covering a top of the ink chamber (412) and the foam chamber (411).

However, Kobayashi et al does not disclose that the foam chamber includes a lower part which is partially inclined and the foam is formed to be larger than an inner shape of the foam chamber, except shapes of the ink filter and the ink head, so that the foam around the ink filter is more compressed than the foam around the opening; wherein the difference between the height of the foam and the height of the foam chamber increases progressively closer to a side of the filter.

Nevertheless, Higuma et al suggests in Figure 7 an ink cartridge comprising a foam (232) having the difference between the height of the foam and the height of the foam chamber increases progressively closer to the filter (not shown) at the opening (233) for allowing to be steadily fed to the printhead (214), see lines 13-34, column 18.

Oda et al suggests in Figure 1 a foam chamber (T) having a foam (25, lines 26-28, column 9) and a lower part which is partially inclined between the left wall and the bottom (21) for minimizing the collection of residual ink.

It would have been obvious to a person having skill in the art at the time the invention was made to make the foam of Kobayashi et al larger than the foam chamber as suggested by Higuma et al for the purpose of allowing the ink to be steadily fed to the printhead, and forming an incline lower part in the foam chamber of Kobayashi et al as suggested by Oda et al for the purpose of minimizing the collection of residual ink so that wasting ink would be reduced.

With regard to claims 2, 4, 9 and 11, the modified foam chamber of Kobayashi et al in view of Oda et al would have an incline.

With regard to claims 3 and 10, the modified foam chamber of Kobayashi et al in view of Oda et al would have an incline from the opening (419) to the filter (425).

With regard to claims 5-6 and 12-13, the modified foam of Kobayashi et al in view of Higuma and Oda et al would have a first section being compressed near the filter (425), a second section being less compressed than the first section along the incline and a third section being less compressed than the second section at the bottom wall so that the injected ink concentrates in the first section of foam and to lesser extent in the second section of foam.

With regard to claims 7 and 14, wherein external air forms air bubbles in the foam (420) which move toward the lower part of the foam chamber, rise up to the opening (414), and into the ink chamber (412), wherein as the air bubbles move through the compressed foam (420), the air bubbles decrease in size since the modified ink cartridge of Oda et al has the same structure as the claimed cartridge.

Response to Applicant's Arguments

The applicant argues at page 5 of the amendment that Shinada does not suggest that "a lower part the foam is formed to be larger than an inner shape of the foam chamber so that the foam around the ink filter is more compressed than the foam around the opening". The argument is persuasive without traverse. However, this limitation is suggested in the Higuma et al reference as stated above.

The applicant argues at the last paragraph of page 5 in the amendment that the ink tank T of Oda is not the foam chamber because it does not contain a foam. The argument is not persuasive because lines 26-28, column 9, in the Oda reference indicates that the element (25) is a sponge-like ink keeper or a foam.

The applicant argues at page 6 of the amendment that there is no motivation to combine the Kobayashi reference with the Oda et al reference. The argument is not persuasive because the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Kobayashi discloses in Figure 1a an ink cartridge comprising a foam chamber (411) but does not disclose that this chamber includes a lower part partially inclined. Oda et al suggests in Figure 1 a foam chamber (T) having an inclined lower part for minimizing the collection of residual ink so that wasting ink would be reduced since the inclined surface does not collect residual ink. Thus, the inclined surface suggested by Oda et al can be employed in the foam

Art Unit: 2861

chamber of Kobayashi. One skilled in the art would have been motivated to use the inclined surface in order to reduce the collection of wasting ink.

CONCLUSION

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo whose telephone number is (571) 272-2262. The examiner can normally be reached on Tuesday to Friday from 9:00 A.M. to 7:0 P.M.. The fax number of this Group 2861 is (571) 273-8300.



ANH T.N. VO
PRIMARY EXAMINER

May 21, 2005